



## **FEDERAL COMMUNICATIONS COMMISSION**

### **47 CFR Parts 73 and 74**

**[MB Docket Nos. 15-146; GN Docket No. 12-268; FCC 20-175; FRS 17303]**

### **Amendment of the Commission's Rules to Provide for the Preservation of One Vacant Channel in the UHF Television Band for Use by White Space Devices and Wireless Microphones**

**AGENCY:** Federal Communications Commission.

**ACTION:** Final rule.

**SUMMARY:** In this Report and Order (Order), the Federal Communications Commission declines to adopt rules proposed in the Commission's 2015 Notice of Proposed Rulemaking, 30 FCC Rcd 6711 (2015) (2015 NPRM) in this proceeding and, therefore, terminates the proceeding. While the Commission continues to support unlicensed white space devices and wireless microphone user operations and continues to believe they serve important interests, based on the record of this proceeding and in light of other actions it has taken during the years since the rules were proposed, coupled with the increased burden that its 2015 proposal would place on the use by broadcasters of spectrum in the more consolidated TV band that now exists following the Incentive Auction, the Commission finds that the rules proposed in the 2015 NPRM would not serve the public interest. In reaching this conclusion, the Commission finds other actions it has taken since the 2015 NPRM to support white space devices and wireless microphones are the preferred avenues for the continued support of these services. Accordingly, the Commission terminates this docket.

**DATES:** The decision is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission's Report and Order (R&O), MB Docket Nos. 15-146; GN Docket No. 12-268; FCC 20-175, adopted on December 8, 2020 and released December 9, 2020. The full text of this document is available for download at <https://www.fcc.gov/edocs>. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

## Synopsis

1. In this Order, the Commission declines to adopt the proposals in the 2015 NPRM finding that support of white space device and wireless microphone users is now more effectively being achieved through other Commission proceedings, and, as a result, the proposals to preserve a vacant channel for shared use by white space devices and wireless microphone operations do not serve the public interest.

2. The Commission finds that the spectrum landscape has changed significantly since 2015. Without question, today's TV band is smaller and more densely packed than it was at the time the Commission adopted the 2015 NPRM. To illustrate, at the time the 2015 NPRM was adopted, there were 1,384 full power and Class A television stations operating on UHF channels 21 through 51 for an average of 46 stations per channel. Today, there are 1,088 such stations operating on channels 21 through 36, an average of 68 stations per channel, many with expanded facilities. In addition, the TV band is more densely packed as a result of changes made by stations after the Incentive Auction and because reverse auction winners continue to operate in the new TV band. Analyses using the Commission's TVStudy software reveal that there are numerous major metropolitan areas in the United States that have no vacant, 6 MHz channels. This reality undermines the Commission's goal of creating a nationwide solution as proponents of the 2015 NPRM proposal argued on behalf of the proposal on the grounds that such a nationwide vacant channel was essential.

3. Subsequent to adoption of the 2015 NPRM, the Commission took a number of significant steps to ensure that white space device and wireless microphone operations can flourish. In responding to the 2015 NPRM, white space device proponents cited the need to create certainty that vacant channels would be available for their use in order to promote greater innovation in new devices and services, including increased access to broadband services across the country. The Commission believes that its more recent actions in other proceedings have helped to create such certainty by allowing for more robust service and efficient spectral use in the post-Incentive Auction television band as well as in the 600 MHz guard bands and 600 MHz wireless services and by revising the rules to allow for enhanced fixed white space device operations in rural areas. The Commission finds that these actions have achieved the benefits sought by white space device proponents and obviate the need to impose the burdensome vacant channel preservation requirement on television broadcasters. Similarly, when responding to the 2015

NPRM, wireless microphone users expressed concerns about the reduced amount of spectrum that would be available for use by wireless microphones in the repacked TV bands, and they cited to such concerns to support their call to preserve a vacant channel for shared use with white space devices. Once again, the Commission believes that the steps it has taken in other proceedings since the 2015 NPRM will ensure that wireless microphone operators have access to sufficient spectrum, including spectrum outside of the broadcast television band, to meet their needs. These actions underscore the conclusion that the regulatory approach proposed in the 2015 NPRM is no longer needed and is outweighed by the burden that such an action would place on the broadcast users of the TV band.

4. White Space Devices. In August 2015, recognizing the significantly altered regulatory landscape for unlicensed white space devices in the broadcast television bands, the Commission adopted its White Spaces R&O, 30 FCC Rcd 9551. In that proceeding, the Commission modified several rules to allow for more robust service and efficient spectral use in the post-Incentive Auction television band as well as in the 600 MHz guard bands and 600 MHz wireless services band that would be created as a result of repurposing the television bands following the Incentive Auction. Specifically, the Commission enabled lower powered operations closer to television stations, as well as higher powered operations in less-congested rural areas that enhance broadband services in these areas. The Commission also established rules permitting white space device operations on spectrum outside of the broadcast television band in the 600 MHz guard bands (including duplex gap) and the 600 MHz wireless service band, and on channel 37.

5. In the Commission's White Spaces Reconsideration Order, 34 FCC Rcd 1827, in that proceeding, it took additional action to promote white spaces operations. Recognizing that white space device operations served to provide vital links for broadband services to Americans especially in rural and underserved areas, the Commission increased the maximum permissible fixed white space device antenna height above ground level in less congested areas such as rural areas.

6. In 2020, the Commission initiated a new proceeding proposing actions to "spur the continued growth of the white space device ecosystem" that had been evolving. In the White Spaces NPRM, 35 FCC Rcd 2101, the Commission focused chiefly on providing additional opportunities for unlicensed white space devices operating in the broadcast television bands to deliver wireless broadband

services in rural and underserved areas and applications associated with the Internet of Things (IoT). The Commission initiated the proceeding largely in response to Microsoft’s 2019 petition for rulemaking, which had proposed revisions to promote greater flexibility for white space device operations in rural areas; which had garnered broad support from many white space device proponents. On October 28, 2020, the Commission issued a Report and Order and Further Notice of Proposed Rulemaking, FCC 20-156, adopting new targeted rules with this focus, which will benefit American consumers in rural and underserved areas while protecting broadcast television stations and other protected services initiated from harmful interference. Specifically, the Commission permitted higher power and higher antennas for fixed white space devices in “less congested” geographic areas where there continue to be vacant TV channels available for use by white space devices (and wireless microphones), and permitted higher power mobile operation within “geo-fenced” areas in these “less congested” areas. The Commission also adopted rule changes designed to facilitate the development of new and innovative narrowband IoT services in these bands. Finally, the Commission sought comment on whether it should permit use of a terrain-based model (e.g., Longley-Rice Irregular Terrain Model) when determining available TV channels for white space device operations, which if adopted could potentially expand the areas available for white space device operations in this spectrum.

7. In the 2015 vacant channel proceeding, white space device proponents argued that the proposals in the 2015 NPRM would ensure that the public has access to these services and would help promote investment and innovation in these technologies. The Commission’s more recent actions, however, reflect the subsequent evolution of white space device operations, as indicated by support from major white space device proponents over the last few years, to focus on rural and underserved areas where a substantial amount of spectrum remains available for white space devices after repacking. The Commission finds that these alternative actions are an effective means for the Commission to support white space device operations and the white space device ecosystem as it has evolved since 2015. We conclude that the rationale behind the Commission’s tentative conclusion concerning the need to preserve a vacant channel in the broadcast television band to provide certainty for the white space device industry no longer holds.

8. Wireless microphones. In 2015, in a proceeding that had been initiated to explore steps to address wireless microphone users' long-term needs following the Incentive Auction and repacking of the broadcast television band, the Commission adopted several changes to ensure sufficient spectrum would continue to be available for wireless microphone use. With respect to the reconfigured broadcast television band following the Incentive Auction and repacking, the Commission revised its rules to provide more opportunities for wireless microphones to access spectrum by allowing greater use of the VHF broadcast television channels and more co-channel operations with television stations, and adopted more efficient analog and digital technical standards to ensure more efficient use of the available spectrum. The Commission also expanded eligibility for the licensed use of the 600 MHz duplex gap to all entities now eligible to hold wireless microphone licenses to use television band spectrum. The Commission also took several actions to promote use of spectrum bands outside of the broadcast television band, including providing new opportunities for use in UHF spectrum in the 900 MHz band.

9. In 2017, in the Wireless Microphones Reconsideration Order and Further Notice, 32 FCC Rcd 6077, the Commission furthered its goal of promoting wireless microphone operations and ensuring sufficient spectrum would be available following the Incentive Auction and repacking process. Specifically, it made technical revisions to rules it had adopted for both licensed and unlicensed wireless microphone operations in the TV bands, and in the 600 MHz guard band and duplex gap, as well as to rules for licensed wireless microphone operations in several frequency bands outside of the TV and 600 MHz bands, including the UHF spectrum in the 900 MHz band. It also issued a Further Notice of Proposed Rulemaking seeking to ensure that certain professional theater, music, performing arts, or similar organizations that currently operate wireless microphones on an unlicensed basis can obtain licenses to operate in the broadcast television bands as well as other frequency bands, including UHF spectrum in the 900 MHz band, if necessary, to ensure that they can provide the public interest benefits of significantly enhanced event productions to the American people.

10. The Commission is not persuaded by wireless microphone commenters in the dormant docket proceeding who maintain that the Commission should refresh the record in this proceeding and adopt the vacant channel preservation proposals. The Commission finds that these proposals are no longer necessary to further their stated objective.

11. Public Interest Analysis. While the Commission recognizes the important benefits provided by white space devices and wireless microphones in the TV bands, it finds that the other actions that the Commission has taken to support these users subsequent to issuance of the 2015 NPRM provide a better alternative for addressing their needs than through efforts to preserve a vacant channel. Moreover, the Commission can no longer say that the 2015 NPRM's proposals "will not significantly burden broadcast applicants." NAB has stated the vacant channel proposals "would impose significant burdens on broadcasters both by restricting innovation and by imposing new and costly administrative burdens on broadcasters seeking to construct new or modified facilities." The Commission agrees. In light of changed circumstances the Commission concludes that it should not deviate from previous Commission decisions that use of the TV bands by primary and secondary broadcast users have priority over wireless microphones and white space devices. The Commission believes that preserving robust over-the-air broadcast television service remains an important spectrum allocation priority, especially to rural areas without adequate MVPD and broadband service alternatives. In addition, the Commission has recognized the promise of next generation ATSC 3.0 service by over-the-air television broadcasters to expand the universe of potential uses of broadcast spectrum capacity for new and innovative services in ways that will complement the nation's burgeoning 5G networks and usher in a new wave of innovation and opportunity. As NAB and a number of broadcasters noted in their 2015 comments, adoption of the proposed rules would serve to freeze full power stations in place and hamstring their ability to expand or innovate to better serve their viewers. Having restructured the TV band, the Commission finds that to now adopt a requirement that primary and/or secondary television stations protect spectrum availability for white space devices and wireless microphones in the smaller, more densely packed television band, would not serve the public interest. Moreover, NAB points out that the proposals would require "novel engineering studies" that "would be expensive and time-consuming, particularly for smaller broadcasters" where "the cost of conducting such studies is likely to be multiples of current engineering design costs." Significantly, television stations would bear the administrative burden of studying and proving the availability of channels for other users in order to have an application that is otherwise in the public interest granted – both in congested areas where a vacant channel may not be available in the television band and in less congested areas where more spectrum is available such that analysis is not warranted.

Therefore, the Commission finds that, on balance, seeking to preserve a vacant channel for shared use by white space devices and wireless microphone operations at this time, considering all of the actions that the Commission has taken since 2015 to promote those users' interests, are outweighed by the burdens of the proposals on broadcasters and the Commission terminates the proceeding.

FEDERAL COMMUNICATIONS COMMISSION.

Marlene Dortch,  
Secretary.

Editorial Note: The Office of the Federal Register received this document on December 15, 2020.  
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